

Translation

PATENT COOPERATION TREATY

PCT/JP2003/010760



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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|---|---|---|
| Applicant's or agent's file reference 03-F-053PCT | FOR FURTHER ACTION See Form PCT/IPEA/416 | |
| International application No. PCT/JP2003/010760 | International filing date (day/month/year) 26 August 2003 (26.08.2003) | Priority date (day/month/year) 26 August 2002 (26.08.2002) |
| International Patent Classification (IPC) or national classification and IPC G01N 33/48, 15/14 | | |
| Applicant JAPAN SCIENCE AND TECHNOLOGY AGENCY | | |

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:
 - ☒ Box No. I Basis of the report
 - ☐ Box No. II Priority
 - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Box No. IV Lack of unity of invention
 - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☒ Box No. VI Certain documents cited
 - ☐ Box No. VII Certain defects in the international application
 - ☐ Box No. VIII Certain observations on the international application

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|--|--|
| Date of submission of the demand 26 January 2004 (26.01.2004) | Date of completion of this report 18 November 2004 (18.11.2004) |
| Name and mailing address of the IPEA/JP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/010760

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished

- ☒ the description:

pages _____ 1-9 _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

- ☒ the claims:

pages _____, as originally filed/furnished

pages* _____, as amended (together with any statement) under Article 19

pages* 1-3 received by this Authority on 01 November 2004 (01.11.2004)

pages* 4, 5 received by this Authority on 23 July 2004 (23.07.2004)

- ☒ the drawings:

pages _____ 1-7 _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP 03/10760

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|-----|-----|
| Novelty (N) | Claims | 1-5 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | 1-5 | NO |
| Industrial applicability (IA) | Claims | 1-5 | YES |
| | Claims | | NO |

2. Citations and explanations

Document 1: Takanori ICHIKI "Nano health care chip", BIO INDUSTRY, Vol. 19, No. 3, (March 2002), pages 39-45

Document 2: SHIKA, HARA et al., "2001 nen (Heisei 13 nen) shunki dai 48 kai ouyou butsurigaku kanren rengou kouenkai, kouen yokoushuu, dai 3 bunsatsu, 28 March 2001, page 1276, 29p-R-6

Document 3: ICHIKI et al., "153th Committee Meeting of the Japan Society for the Promotion of Science, "Dai 14 kai Plasma zairyou kagaku symposium abstract shu", 13 June 2001, page 1, Lecture Number A1-1

Document 4: JP 2001-165939 A (Asahi Kasei Corp.), 22 June 2001

Document 5: JP 11-23582 A (DKK Corp.), 29 January 1999

Document 6: JP 07-270302 A (Toa Medical Electronics Co., Ltd.), 20 October 1995

Document 7: JP 09-288009 A (Hitachi Ltd.), 4 November 1997

Claims 1 and 2

Document 1 (see the disclosure entitled "on-chip cell sorter" on page 43) and documents 2 and 3 disclose sheath-

flow cell separators comprising a first flow passage containing a sample and second and third flow passages not containing a sample, a sample recovery passage and waste liquid passages provided on both sides of said recovery passage. In addition, in relation to the measurement of cells used in the on-chip cell sorter, document 1 indicates that if microscopic techniques and fluorescence techniques that utilise particular optical systems, such as phase-contrast microscopy or fluorescent microscopy, are employed, it is possible to obtain the form of the cells and cell organelle, and even information relating to matters such as the spatial distribution of a particular molecule within a cell.

The use of water pressure, which is applied due to differences in height of the water surface, as the driving force in the movement of a liquid is common practice in the field of analysis (see document 4, paragraph [0018] and document 5).

Claims 3-5

In relation to the measurement of cells, document 6 (see paragraphs [0053]-[0061]) and document 7 (see paragraph [0019]) disclose optical measuring devices for obtaining both fluorescent microscopic images and stereo microscopic images.

It would be easy for a person skilled in the art to conceive of applying the optical measuring devices disclosed in documents 6 and 7 to the on-chip cell sorter disclosed in document 1.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/010760

Box No. VI Certain documents cited

1. Certain published documents (Rule 70.10)

| Application No. Patent No. | Publication date (day/month/year) | Filing date (day/month/year) | Priority date (valid claim) (day/month/year) |
|-------------------------------|--------------------------------------|---------------------------------|---|
| JP 2003-107099 A [E, X] | 09 April 2003 (09.04.2003) | 27 September 2001 (27.09.2001) | |

2. Non-written disclosures (Rule 70.9)

| Kind of non-written disclosure | Date of non-written disclosure (day/month/year) | Date of written disclosure referring to non-written disclosure (day/month/year) |
|--------------------------------|--|---|
| | | |